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| Modu | Lessons | Vocab and Tools | Standards |
| Number Sense (from BETTERLESSON) | <http://betterlesson.com/user/264214/44958/122278/christa-lemily/curriculum>   * Perfect Squares Tile Activity * Perfect Cubes Activity   <http://betterlesson.com/lesson/556587/rational-or-irrational-day-1-of-2>   * Real Number Venn Activity Sheet   **Assessment A**  <http://betterlesson.com/user/264214/44958/122278/christa-lemily/curriculum>   * Exponents Investigation – Multiplication * Exponents Investigation – Division * Exponents Investigation – A Power Raised to a Power * Negative and Zero Exponents * Writing Numbers in Scientific Notation * Multiplying in Scientific Notation * Dividing in Scientific Notation * Comparing Computer Bytes   *Supplement with MARS task: Estimating Length using Scientific Notation*  **Assessment B** | New or Recently Introduced Terms  **Scientific Notation** (The scientific notation *for a finite decimal* is the representation of that decimal as the product of a decimal and a power of 10, where satisfies the property that it is at least , but smaller than , or in symbolic notation, . For example, the scientific notation for is .)  **Order of Magnitude** (The order of magnitude*of a finite decimal* is the exponent in the power of 10 when that decimal is expressed in scientific notation. For example, the order of magnitude of is because when is expressed in scientific notation as , is the exponent of . *Sometimes we also include the number in the definition of order of magnitude* and say that the order of magnitude of is .)  **Perfect Square** (A *perfect square* is the square of an integer.)  **Square Root** (The *square root* of a number is equal to if . It is denoted by .)  **Cube Root** (The *cube root* of a number is equal to if . It is denoted by .)  **Irrational Number** (*Irrational numbers* are numbers that are not rational.)  **Infinite Decimals** (*Infinite decimals* are decimals that do not repeat nor terminate.)  **Rational Approximation** (*Rational approximation* is the method for determining the approximated rational form of an irrational number).  **Familiar Terms and Symbols[[1]](#footnote-1)**  Exponential Notation  Base, Exponent, Power  Integer  Whole Number  Expanded Form (of decimal numbers)  Square and Cube (of a number)  Equivalent Fractions  **Suggested Tools and Representations**   * Scientific Calculator | 8.EE.A.1 Know and apply the properties of integer exponents to generate equivalent numerical expressions. *For example, 32 × 3-5 = 3-3 = 1/33 = 1/27.*  8.EE.A.2 Use square root and cube root symbols to represent solutions to the equations of the form and , where is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that is irrational  8.EE.A.3 Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. *For example, estimate the population of the United States as 3 × 108 and the population of the world as 7 × 109, and determine that the world population is more than 20 times larger.*  8.EE.A.4 Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.  8.NS.A.1 Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.  8.NS.A.2 Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., . *For example, by truncating the decimal expansion of , show that is between and , then between and , and explain how to continue on to get a better approximation.* |

1. [↑](#footnote-ref-1)